Appl. No.	: :	10/694,928	Confirmation No. 5095
Applicant	: :	Ian A. Maxwell	
Filed:	: :	October 27, 2003	
TC/A.U.	:	2883	
Examiner		Derek L. Dupuis	
Docket No.		RPO 40A	
Customer No.		22877	

Commissioner for Patents

P.O. Box 1450

Alexandria VA 22313-1450

Amendments

Sir:

In response to the Office action of March 23, 2006, please find the following amendments, remarks and arguments:

Amendments to Claims in the listing of claims begins on page 2.

Remarks/Arguments begin on page 5.

Amendments to the Claims:

This listing of claims replaces all prior versions, and listings, of the claims in the applications.

Listing of Claims

Claim 25 (Currently Amended): An integrated optical waveguide comprising:

a substrate;

a light transmissive element comprising a waveguide and a lens as a unitary body;

an upper cladding patterned to have at least one region in which the light transmissive element is air clad ; and

wherein said lens has a face perpendicular to the substrate and focuses and collimates light in a plane parallel to the substrate and a lens face width at least 50% larger than the waveguide.

Claim 35 (Previously presented): An integrated optical waveguide according to claim 25, wherein the upper cladding is chosen from a group comprising an organosilicon condensate polymer.

Claim 43 (Previously presented): An integrated optical waveguide according to claim 25, wherein the substrate comprises silicon, quartz, fused silica, glass, or a polymeric material.

Claim 44 (Previously presented): An integrated optical waveguide according to claim 43, wherein the polymeric material comprises an acrylate, Perspex, polymethylmethacrylate, polycarbonate, polyester, polyethyleneterephthalate or PET.

Claim 45 (Previously presented): An integrated optical waveguide according to claim 25 wherein the light transmissive element comprises materials selected from polymeric materials, glass and semiconductors.

Claim 66 (Previously presented): An integrated optical waveguide according to claim 25 including a lower cladding layer between the substrate and the light transmissive element.

Claim 67 (Previously presented): An integrated optical waveguide according to claim 66 wherein the lower cladding layer comprises materials selected from polymeric materials, glass and semiconductors.

Claim 68 (Currently amended): An integrated optical waveguide comprising:

a substrate;

~~one or more cladding layers comprising at least one cladding layer patterned to have at least one region with the cladding material absent; and~~

one or more light transmissive elements each comprising a waveguide and a lens as a unitary body; and

one or more cladding layers comprising at least one cladding layer patterned to have at least one region with the cladding material removed from at least one region of the one or more light transmissive elements; wherein ~~said~~ the lens has a face perpendicular to the substrate and a lens face width at least 50% larger than the waveguide and focuses and collimates light in a plane parallel to the substrate.

Claim 69 (Previously presented) The integrated optical waveguide of claim 68 wherein at least one of said one or more cladding layers is composed of an organosilicon condensate polymer.

Claim 70 (Previously presented) The integrated optical waveguide of claim 68 wherein said one or more light transmissive elements and at least one of said one or more cladding layers are composed of materials chosen from a group comprising organosilicon condensate polymers, polymers, quartz, glass and semiconductors.

Claim 71 (Previously presented) The integrated optical waveguide of claim 68 wherein said substrate is composed of materials chosen from a group comprising silicon, quartz, fused silica, glass, or a polymeric material.

Claims 1 - 24, 29-32, 49-65, previously withdrawn.

Claims 26-28, 33-34, 36-42, 46-48, previously cancelled.

REMARKS/ARGUMENTS

Please note in the as published application, U.S. 2005/0089298:

[0091] " One particularly suitable material for a patterned upper cladding is a UV curable siloxane polymer, synthesised for example by a condensation reaction as disclosed in the U.S. patent application Ser. No. 10/308562."

From the Oxford American College Dictionary, 2002; ISBN 0-399-14415-3: siloxane: a compound having a molecular structure based on a chain of alternate silicon and oxygen atoms, esp. (as in silicone) with organic groups attached to the silicon atoms.

[5], [6] As discussed in the conference call of June 20, applicants respectfully point out [0091] of the current application. This statement discloses the pertinent matter and identifies the source, U.S. patent application Ser. No. 10/308562, now U.S. 6,818,721. Examiner Dupuis examined the MPEP and CFR and advised applicants that the reference is not included in its entirety since it was not explicitly included by reference in its entirety in the original application.

Applicants also make the point, the phrase, "...UV curable siloxane polymer, synthesised for example by a condensation reaction...", may be restated as an "organosilicon condensate polymer" with equivalent meaning to one knowledgeable in the art.

[9] While the integrated optical package disclosed in '177 is called a "lens", it is not a lens as commonly understood. Certainly it is not a lens of the type that's the subject of the instant patent application. It is more properly termed a "mode converter", whose function is to gradually

change the size and/or shape of the optical mode propagating through it. Please note in '177, claim 1 refers to "an optical device having an asymmetric modal area...". The Penguin Dictionary of Science defines "lens" as "any device that causes a beam of rays to converge or diverge on passing through it. The optical lens is a portion of a transparent refracting medium, usually glass, bounded by two surfaces, generally curved". In contrast, the "lens" of '177 has no refractive surfaces, and no refraction of light occurs. Despite the examiner's statement "the lens focuses light", applicant's argue that it does no such thing. The '177 specification makes no mention of focusing or refraction or collimation of light.

A simple point of distinction is that the lens of the instant invention is a "refractive lens" or "a lens with at least one refractive surface". The lens of '177 is not a focusing or collimating lens; whereas independent claims 25 and 68, as amended, both require the lens to focus and collimate light. It is worth noting that the '177 lens still functions even if all surfaces are covered, i.e. there is no region where the lens is air clad. In the '177 specification, §5 L30-35; the '177 lens need have no air clad surfaces in the optical path, whereas the instant invention lens does. Applicants understand Examiner's rebuttal to the definition of lens and have agreed to a "collimating" restriction. Applicants point out that as with all devices manufactured in high volumes there are departures from the ideal. The integrated waveguide of the instant invention focuses and collimates light within several degrees of the theoretically calculated design target.

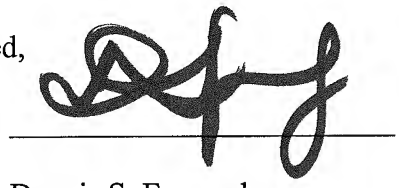
Please note, in Figure 1, "upper cladding" 17 does not extend over "lens 12"; as noted in §5 L30-35, "the lens may be [continuously] coated with a thin layer..."; nowhere is patterning of the upper cladding mentioned or suggested as desirable.

[12] Claim 68 is amended to include collimating. As discussed in the conference call of June 20, applicant is further restricting claim 68 to include a location for the patterning of the cladding material.

[17] As understood by one knowledgeable in the art, a siloxane polymer is a linear Si-O-Si chain with organic sidegroups, whereas Ghoshal's materials are branched. Additionally, Ghoshal's materials are not the "organosilicon condensate polymers" of the instant invention because they're not produced by a condensation reaction such as that disclosed in U.S. application 10/308562.

Applicants respectfully request Examiner to reconsider his finding of new matter for claims 35, 69, and 70. Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,



Dennis S. Fernandez

Reg. No. 34,160

Date: 6/23/06

Address: **FERNANDEZ & ASSOCIATES LLP**

1047 El Camino Real
Menlo Park, CA 94025
Customer No: **22877**
Phone: (650) 325-4999
Fax: (650) 325-1203
Email: *iploft@iploft.com*